

Presented by

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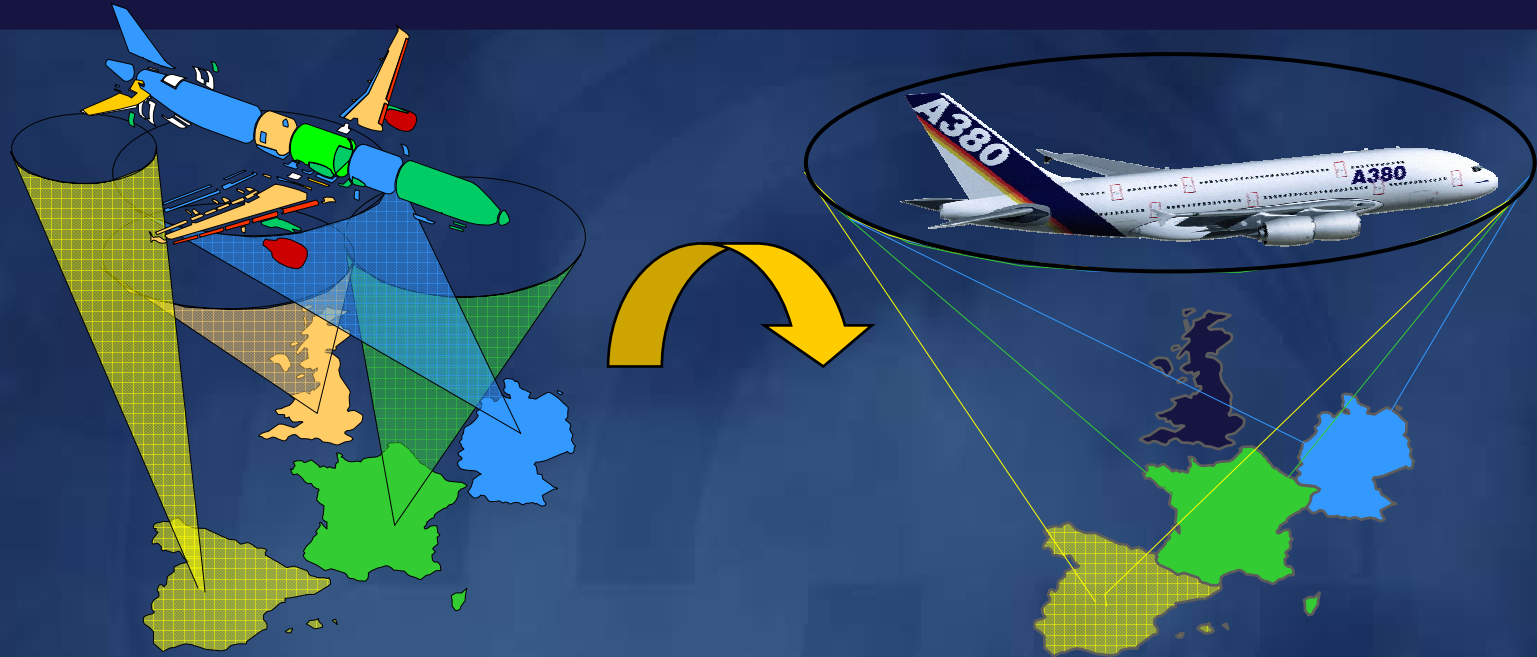
Composite Technology, Materials and Processes

# Bonding Processes at Airbus



**AIRBUS**

# Introduction



# AIRBUS

## ***A Single integrated European Company***

- ▶ **Transnational Organization  
(Engineering, Manufacturing,  
Procurement, etc.)**
- ▶ **Transnational Technology Development**



# Bonding History

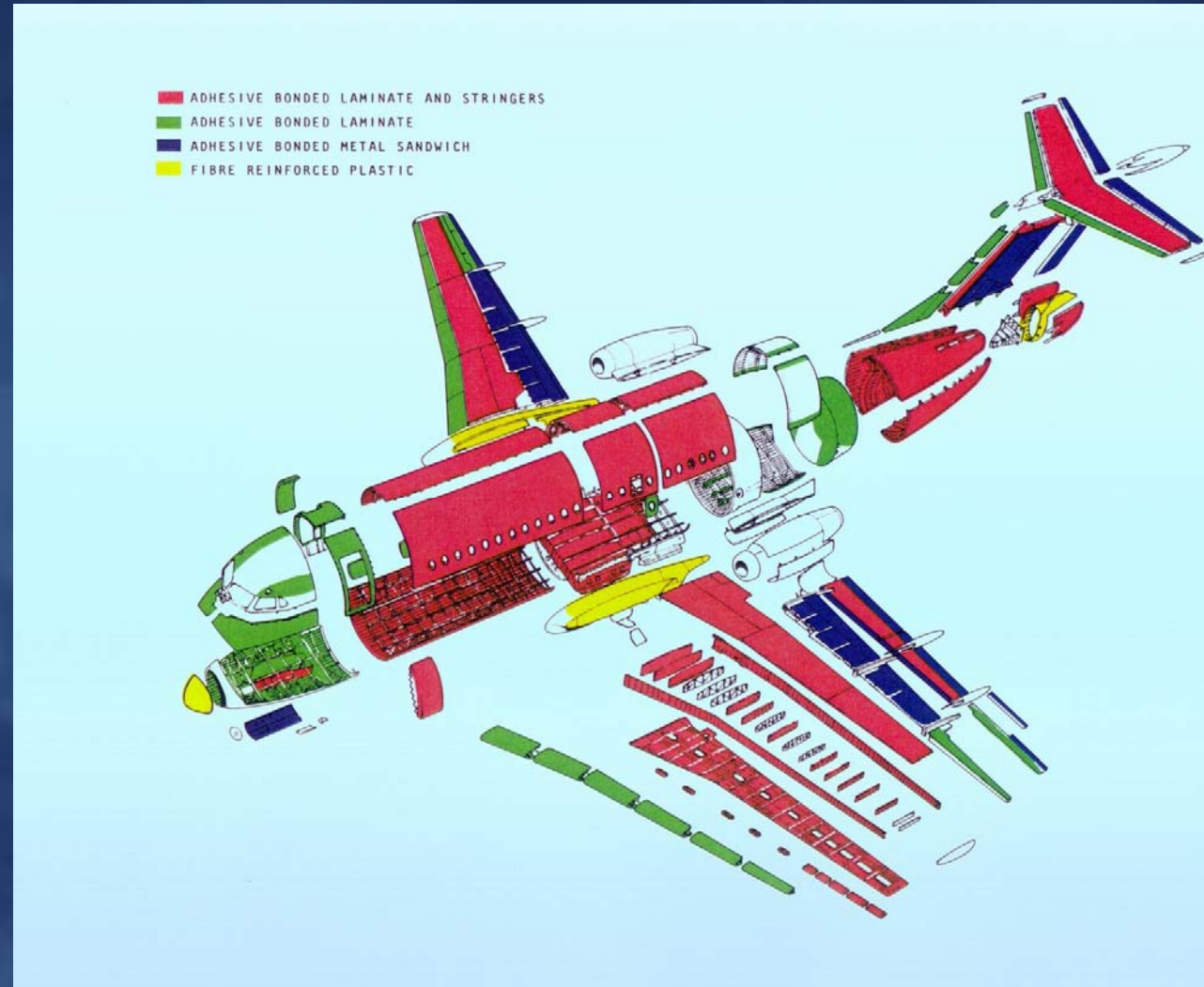
## Fokker F28

CAA pre-treatment

Primer BSL 101

Phenolic adhesive  
(Redux 775)

Excellent in-service  
behaviour



# Bonded Structures at Airbus

Bonding of metallic structures was introduced from the beginning of A300 manufacture

- ▶ Longitudinal joint (lap joint)

**AIRBUS A300 / A310 / A330 / A340**

- ▶ Circumferential joint
- ▶ Wing connection (doubler)
- ▶ Stringer
- ▶ Window doubler

**AIRBUS A321**

- ▶ Inner Flap

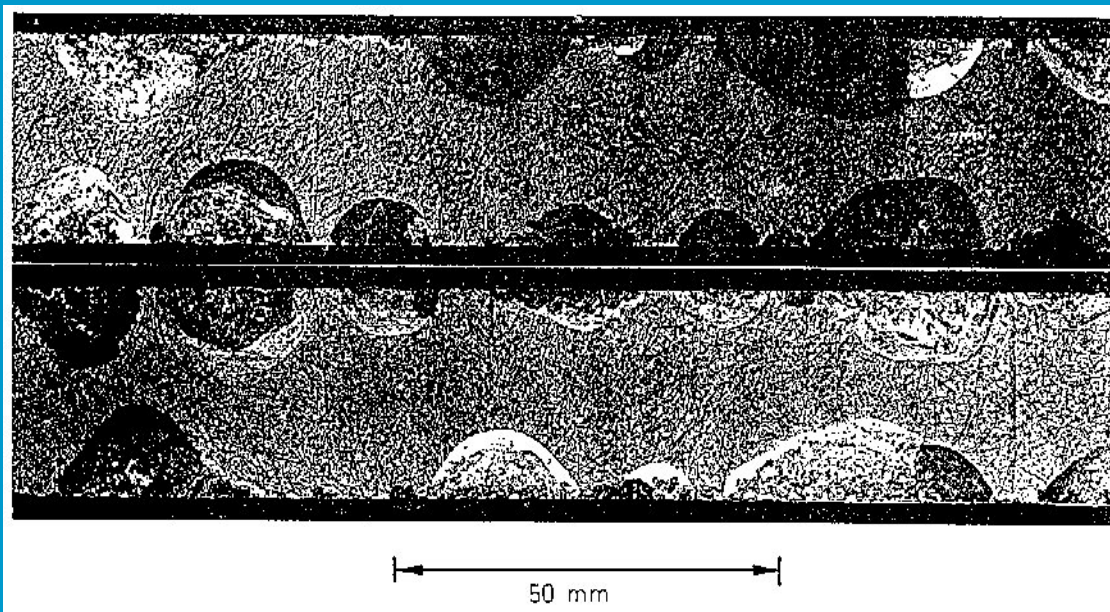
**Al-Cu 2024 clad**

# Airbus Bonding History

Bondline corrosion till a/c 156

CSA (chromic sulphuric acid) or pickling (quality aspects)

Old epoxy adhesive (hot/wet not sufficient)

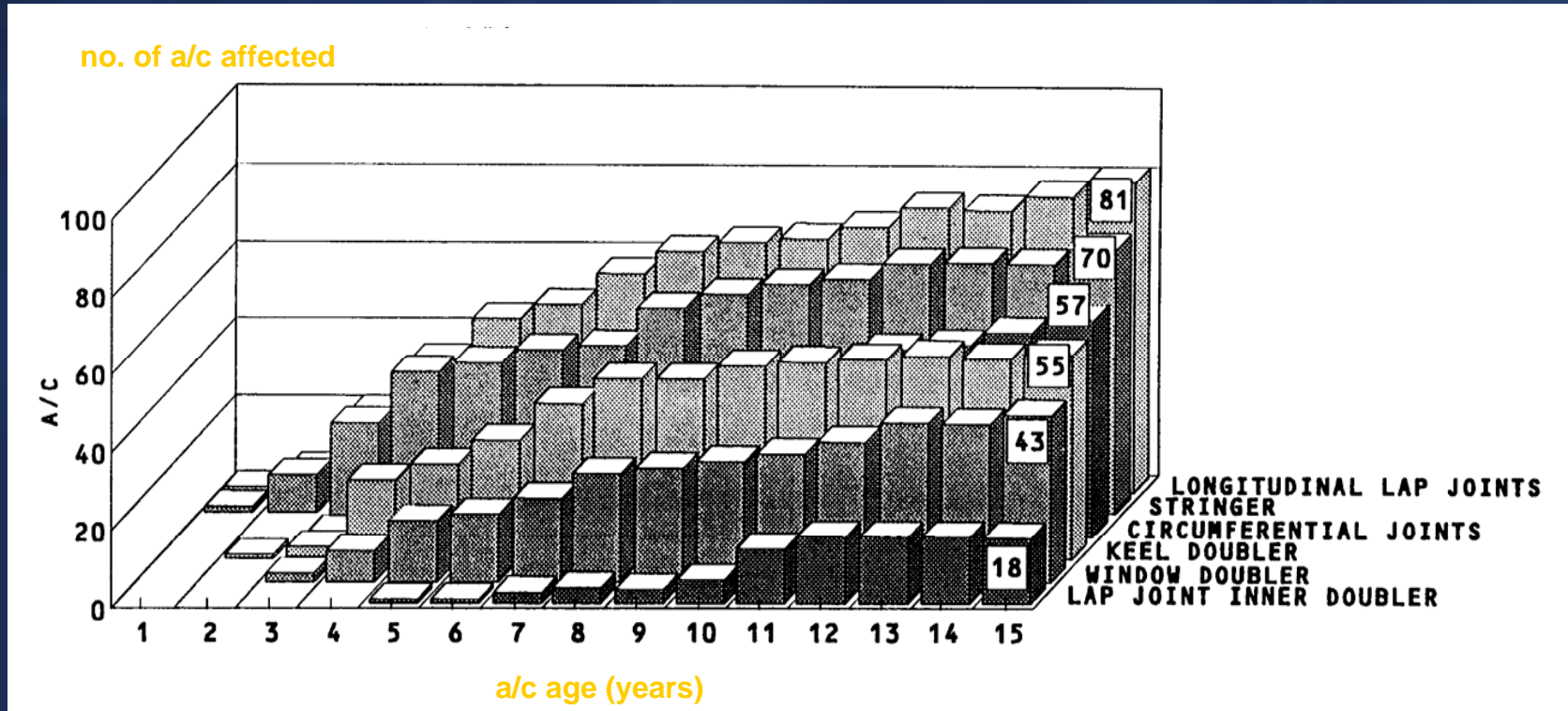


Massive corrosion, fast propagation along bondline, not visible

Many aircraft affected



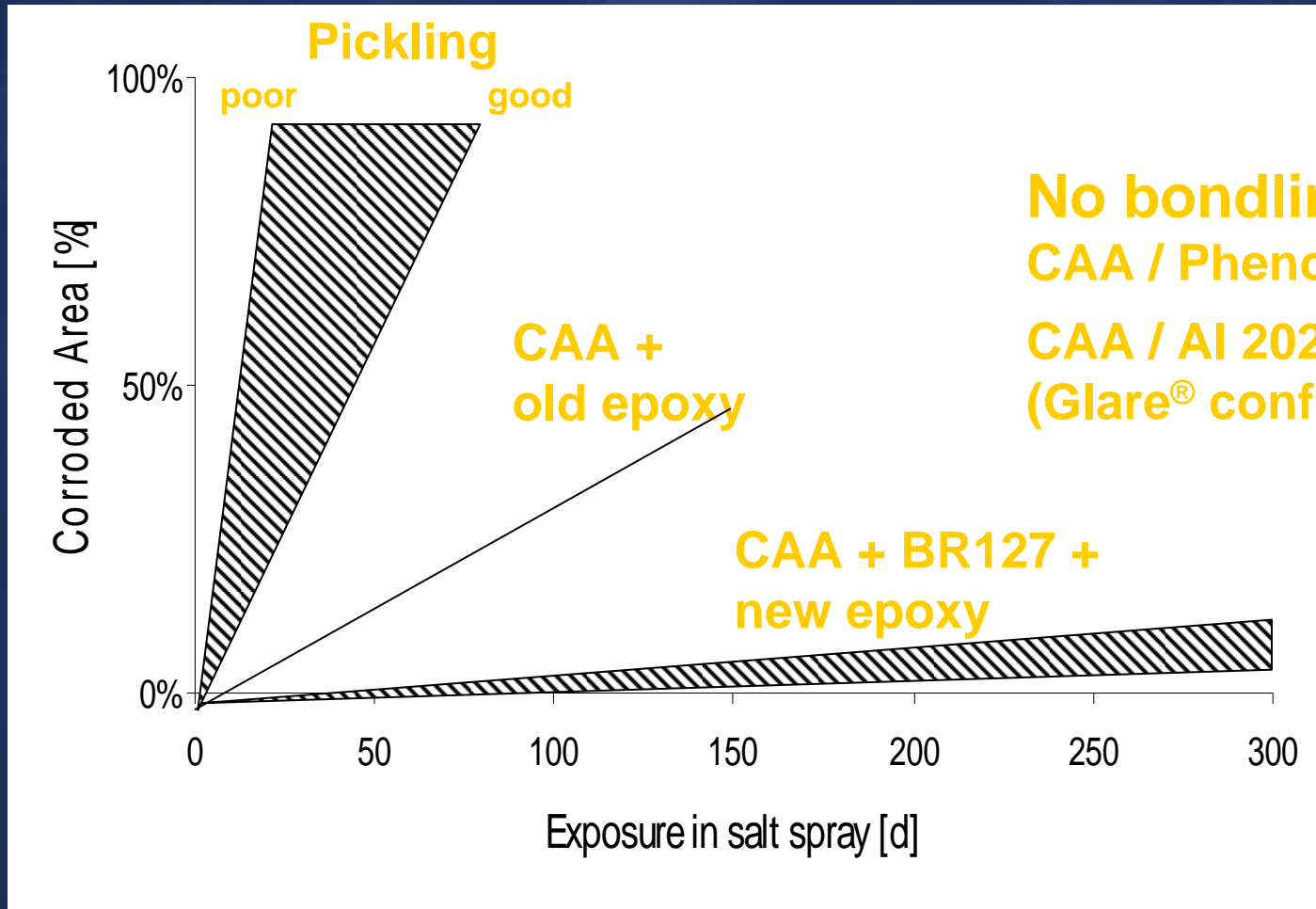
# In-service findings of a/c till 156



**In-service + lead fleet inspection necessary**

# Bondline Corrosion

Test configuration:  
Peel Specimen 200 x 25  
Salt Spray Test  
2024 CLAD

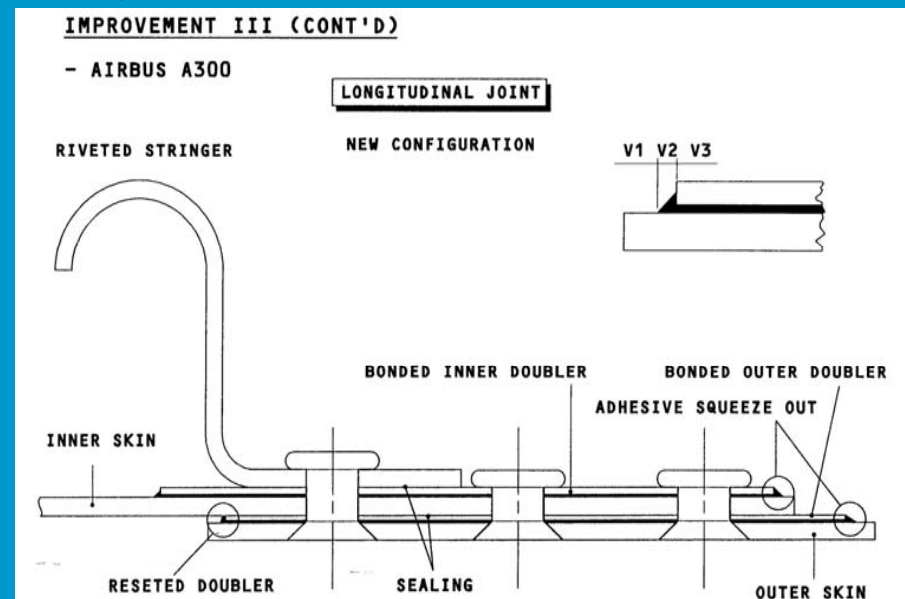


No bondline corrosion  
CAA / Phenolic (Fokker)  
CAA / AI 2024 BARE  
(Glare® configuration)

# Additional measures to prevent bondline corrosion

- CAA also on edges
- wet installation of rivets
- bonding primer on anodised edges
- adhesive squeeze out
- reseted doublers

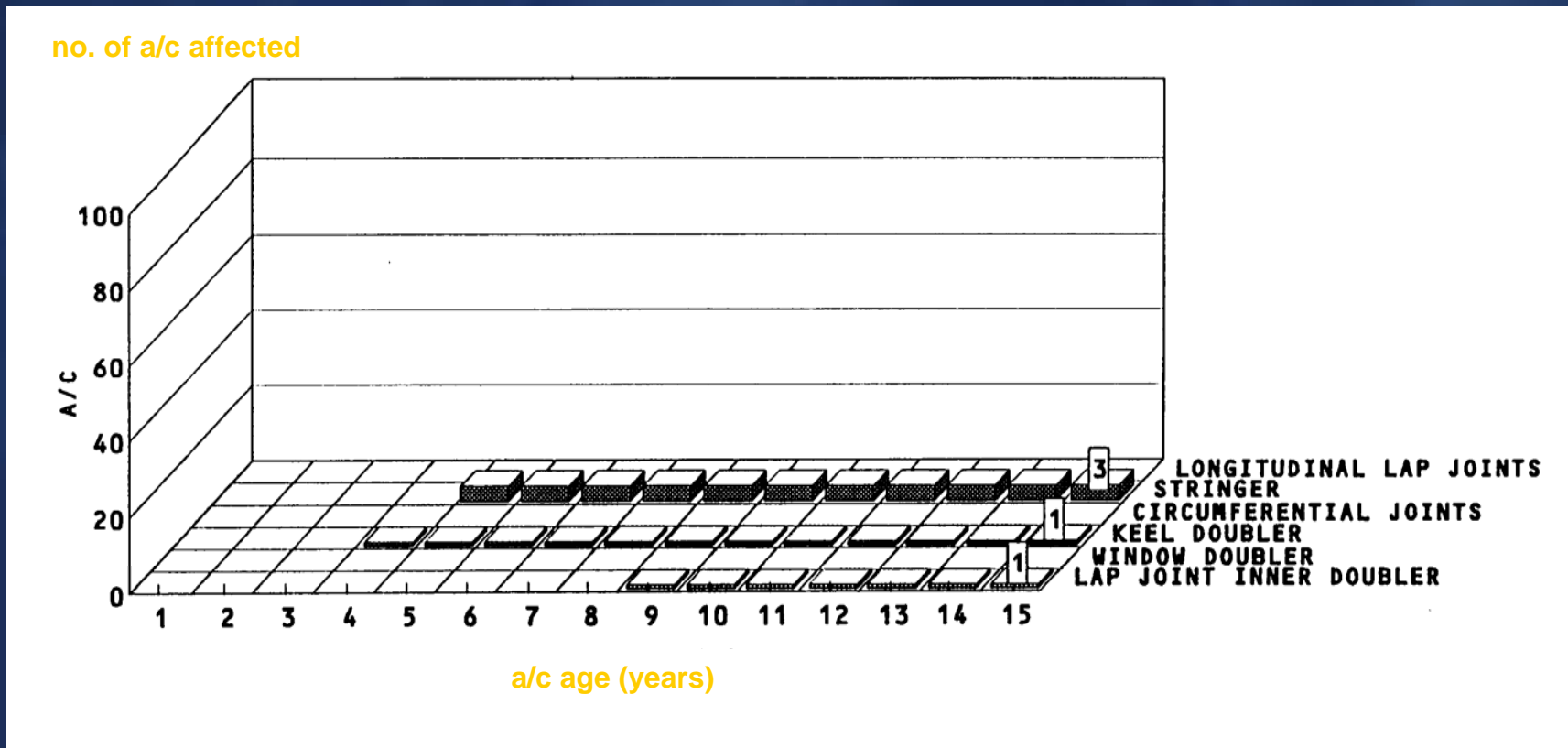
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Bonding banned from bilge area



# In-service findings of a/c after 156



Inspection of bondline for lead fleet investigation only

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